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## ROOM AND PILLAR SYSTEM OF MINING UNDER MOSCOW BASIN CONDITIONS

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The room and pillar system of mining has been employed since February 1949 in Mine No 28 of the Stalinogorskugol' Trust. The idea of using this system originated after the arrival at the mine of the VTU-1 heavy universal cutting machine and the S-153 loading machine. These machines were used to cut a main two-way haulage drift and a secondary two-way drift on which 380-volt, alternating current KE-1 condenser electric locomotives were used in place of a belt conveyer. The experience in cutting the drifts showed that using these highly productive machines together on the broad operational front is much more effective than using them separately.

In October 1948, a variant of the room and pillar system of mining with the use of the VTU-1 and S-153 machines was proposed for Mine No 28. Room drifts No 7 and 5 were cut approximately 4.5 meters wide and 3.2 meters high (the entire thickness of the seam) in the allotted experimental section. Then removal of the pillar between room drift No 7 and the ninth western drift was started.

The geological thickness of the seam in the experimental section was 3.5-3.6 meters. The thickness of the part being removed was 3.1-3.3 meters. In the immediate roof there is 0.3-0.4 meter of clayey shale (in places sand), then 0.5-0.6 meter of clay, and above 3.5-6 meters of watery sand. The floor of the seam contains 0.3 meter of clay, 0.25 meter of coal, and then again 0.3-0.4 meter of clay. Small lentils of sulfur pyrite, 2-3 centimeters thick, occur in the coal seam. Rock layers are infrequent.

Complete mechanization of coal-mining processes has been carried out in the rooms. Cutting is done by the VTU-1 machine which makes seven cuts, five vertical and two horizontal. The shaping of the room mine face and the breaking up of large blocks of coal are carried out by pneumatic drills. An S-153 loading machine loads coal onto the ST-6 scraper conveyer which transfers the coal to an ST-6 conveyer in the room drift. From there coal is fed into mine cars which are hauled by Karlik electric locomotives or KE-1 condenser locomotives.



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A year's experience in using the room pillar system in Mine No 28 has indicated the expediency of this system for seams 3.5-4.0 meters thick under conditions prevailing in the Moscow Basin and similar basins. The system has a number of great advantages: It reduces losses of coal left in the deposit as compared with the longwall method working only one layer. It reduces the consumption of mine timbers 35-40 percent. It increases productivity per section 20-25 percent. It improves the quality of the coal by removal of impurities. It provides a more efficient utilization of the S-153 and VTU-1 machines. Heavy manual labor involved in loading is eliminated by machinery, and there is a greater assurance of safety in the work.

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